

REMARKS

Applicants acknowledge receipt of the Office Action mailed January 15, 2010.

In the Office Action, the Examiner rejected claims 75 and 90-101 under 35 U.S.C. § 103(a) as being unpatentable over *Custance et al.* (U.S. Patent No. 6,238,910); rejected claims 102-113, 116-118, 120, and 121 under 35 U.S.C. § 103(a) as being unpatentable over *Custance* in view of *Ammann et al.* (U.S. Patent Pub. No. 2005/0233370); rejected claims 75 and 90-101 under 35 U.S.C. § 103(a) as being unpatentable over *Custance* in view of *Kalra et al.* (U.S. Patent No. 6,495,106); and rejected claims 102-113, 116-118, 120, and 121 under 35 U.S.C. § 103(a) as being unpatentable over *Custance* in view of *Ammann* and *Kalra*.

By this Amendment, Applicants amend claims 75, 102, and 118. Claims 75, 90-113, 116-118, 120, and 121 remain pending. Of these claims, claims 75, 102, and 118 are independent.

Applicants traverse the rejections above and respectfully request reconsideration for at least the reasons that follow.

I. 35 U.S.C. § 103(a) REJECTIONS

Claims 75 and 90-101 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *Custance*. Applicants respectfully disagree with the Examiner's arguments and conclusions and submit that amended independent claim 75 distinguishes over *Custance* at least for the reasons described below.

Custance discloses an apparatus for automatically hybridizing nucleic acid samples. The apparatus includes a fluid control module and a temperature control module for controlling fluid contacting and temperature of a plurality of DNA samples.

(*Custance*, Abstract). *Custance* further discloses the apparatus 100 includes a housing 102 that contains six thermal management modules 104. Each of the thermal management modules 104 controls the temperature of one of six slide plate assemblies 106. (*Id.* at col. 2, ll. 58-63). The slide plate assembly 106 includes a slide cover 150 that is held in place with a clamp 152. (*Id.* at col. 3, ll. 59-61). Fluid enters and exists each of the slide cavities through ports 226 located at one end of the slide cover 150. The ports 226 provide fluid connections with manifolds 110, 114. (*Id.* at col. 4, ll. 48-51). Both manifolds 110, 114 are formed from multi-layer, diffusion bonded acrylic, in which channels 290, 292, 294, and 296 are machined into planar surfaces of acrylic layers and the layers are bonded together under heat and pressure. (*Id.* at col. 5, ll. 44-47).

With respect to independent claim 75, the Examiner admits that "*Custance* . . . does not expressly state that the two carrier sections are physically separated by the reagent section." (*Office Action*, p. 4, ll. 4-5). The Examiner then asserts that "it would have been obvious to position the reagent section disclosed by *Custance* between the first and second carrier sections. This proposed reconfiguration merely represents a simple rearrangement of parts that would require only slight structural alterations, and would not change the functionality or mode of operation of the device." (*Id.* at p. 4, ll. 6-10).

Such teaching, even if disclosed in *Custance*, which Applicants do not necessarily concede, however, fails to teach or suggest an automated sample processing system, comprising: "a moveable robotic member for dispensing fluid on the at least one carrier; wherein the at least one carrier is inserted or removed during the

processing protocol without interrupting movement of the robotic member," as recited in amended independent claim 75.

The apparatus 100 of *Custance* does not disclose a moveable robotic member for dispensing fluid on a carrier. Rather, as disclosed in *Custance*, "[f]or each slide cavity, fluid enters one of the ports 226 into a first lateral diffusion channel 230 that is cut into the slide cover 150. Next, fluid flows the length of the cavity along the surface of the slide 190 and dumps into . . . a second lateral diffusion channel 232. From the second diffusion channel 232, fluid flows within a return channel 234 bored in the slide cover 150 back towards the ports 226, and exits the slide cavity through one of the ports 226 . . . [T]he slide cover 150 [also] contains two injection ports 236 for manually injecting small liquid volumes . . . directly into each of the slide cavities." (*Custance*, col. 4, ll. 52-67). To replace the diffusion channels and the manifolds in the apparatus 100 of *Custance* discussed above, with a moveable robot member, would require a complete re-design of the apparatus 100.

As explained above, the elements of independent claim 75 are neither taught nor suggested by the cited reference and no reason has been clearly articulated as to why the claims would have been obvious to one of ordinary skill in view of the prior art. Therefore, a *prima facie* case of obviousness has not been established for independent claim 75, and claims 90-101 which depend from claim 75. Claims 75 and 90-101 are therefore patentable over *Custance*, and Applicants respectfully request that this rejection be withdrawn.

Claims 102-113, 116-118, 120, and 121 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *Custance* in view of *Ammann*. Applicants respectfully disagree with the Examiner's arguments and conclusions and submit that amended independent claims 102 and 118 distinguish over *Custance* and *Ammann* at least for the reasons described below.

With respect to independent claims 102 and 118, the Examiner admits that "Custance . . . does not expressly disclose that reagent temperature control elements are provided for regulating the temperature of reagents before they are applied to the sample." (*Office Action*, p. 5, ll. 13-15). As discussed above, the Examiner further admits that "Custance . . . does not expressly state that the two carrier sections are physically separated by the reagent section." (*Id.* at p. 4, ll. 4-5).

In order to cure the deficiencies of *Custance*, the Examiner relies on *Ammann* and alleges "Ammann discloses an automated system for processing a plurality of reaction receptacles each capable of holding and transporting a sample. Reaction receptacles are transported to an arrangement of incubators . . . where they are maintained at a predetermined temperature . . . [R]eagents are stored in separate containers located within a reagent cooling bay . . . Ammann teaches that thermoelectric modules and fan units provide the desired cooling capacity, and are capable of regulating the temperature of a plurality of reagents maintained in a plurality of containers." (*Office Action*, p. 5, line 16 - p. 6, line 3). Such teaching, even if disclosed in *Ammann*, which Applicants do not necessarily concede, however, fails to teach or suggest an automated sample processing system, comprising: "a moveable robotic member for dispensing fluid on the at least one carrier; wherein the at least one

carrier is inserted or removed during the processing protocol without interrupting movement of the robotic member," as recited in amended independent claim 102 and similarly amended independent claim 118.

The specimen pipette assembly 450 and the reagent pipette assembly 470 in *Ammann* fail to disclose inserting or removing a carrier or reagent during a processing protocol without interrupting movement of the robotic member. Thus, *Ammann* also fails to overcome the above noted shortcomings of *Custance*.

As explained above, the elements of independent claims 102 and 118 are neither taught nor suggested by the cited references and no reason has been clearly articulated as to why the claims would have been obvious to one of ordinary skill in view of the prior art. Therefore, a *prima facie* case of obviousness has not been established for independent claims 102 and 118, and claims 103-113, 116, 117, 120, and 121 which correspondingly depend from claims 102 and 118. Claims 102-113, 116-118, 120, and 121 are therefore patentable over *Custance* and *Ammann*, and Applicants respectfully request that this rejection be withdrawn.

Claims 75 and 90-101 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *Custance* in view of *Kalra*. Applicants respectfully disagree with the Examiner's arguments and conclusions and submit that amended independent claim 75 distinguishes over *Custance* and *Kalra* at least for the reasons described below. The deficiencies of *Custance* are discussed above.

With respect to *Kalra*, the Examiner alleges, "the Kalra reference has been provided as evidence that is it known in the art to insert/remove a sample carrier during

processing without interrupting the processing of other samples." (*Office Action*, p. 7, ll. 15-17).

Kalra, however, fails to teach or suggest an automated sample processing system, comprising: "a moveable robotic member for dispensing fluid on the at least one carrier; wherein the at least one carrier is inserted or removed during the processing protocol without interrupting movement of the robotic member," as recited in amended independent claim 75.

Kalra discloses an automated staining apparatus including an arm 30 moveable in three dimensions, and a hollow tip head 70 located on the arm including an integral reagent tip head 40, a wash tip 41, and a blow tip 42 for selectively dispensing gas and liquid onto microscope slides. (*Kalra*, Abstract). The automated staining apparatus 10 of *Kalra* does not include a plurality of drawers for housing the reagent containers. Rather, *Kalra* discloses a reagent vial holder 120 in the form of a reagent vial rack for holding the reagent vials 110. (*Kalra*, col. 9, ll. 15-20). *Kalra* also does not disclose the automated staining apparatus 10 including a plurality of drawers for housing the carrier retention devices. Rather, *Kalra* discloses a slide holder occupied by four 10-well microscope slide trays 190, with each microscope slide 130 retained in the well in a predetermined location relative to the baseplate 22. (*Id.* at col. 9, ll. 25-32). Furthermore, *Kalra* fails to teach or suggest at least two carrier sections with a plurality of drawers housing the carrier retention devices being separated by the reagent section with the plurality of drawers housing the reagent containers. As illustrated in FIG. 1 of *Kalra*, to the right of the reagent vial holder 120 are the microscope slide trays 190. The reagent vial holder 120 does not separate two microscope slide holder sections.

Moreover, *Kalra* fails to teach or suggest inserting or removing a carrier during a processing protocol without interrupting movement of the robotic member. Since the slides 130 are introduced and removed from the automated staining apparatus 10 from above, the slides cross the planes of movement of the arm 30 and interrupt movement of the arm 30. In contrast, in the present invention, the slides are introduced and removed from beneath the planes of movement of the robot without affecting the robotic processing of other slides. Therefore, *Kalra* also fails to overcome the above noted shortcomings of *Custance*.

As explained above, the elements of independent claim 75 are neither taught nor suggested by the cited references and no reason has been clearly articulated as to why the claims would have been obvious to one of ordinary skill in view of the prior art. Therefore, a *prima facie* case of obviousness has not been established for independent claim 75, and claims 90-101 which depend from claim 75. Claims 75 and 90-101 are therefore patentable over *Custance* and *Kalra*, and Applicants respectfully request that this rejection be withdrawn.

Claims 102-113, 116-118, 120, and 121 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *Custance* in view of *Ammann* and *Kalra*. Applicants respectfully disagree with the Examiner's arguments and conclusions and submit that amended independent claims 102 and 118 distinguish over *Custance*, *Ammann*, and *Kalra* at least for the reasons described below.

As discussed above, the Examiner admits that, "Custance . . . does not expressly state that the two carrier sections are physically separated by the reagent section." (*Office Action*, p. 4, II. 4-5). Further, as reiterated above, the Examiner also admits that

"Custance . . . does not expressly disclose that reagent temperature control elements are provided for regulating the temperature of reagents before they are applied to the sample." (*Id.* at p. 9, ll. 5-6).

In order to cure the deficiencies of *Custance*, the Examiner relies on *Ammann* and *Kalra* and alleges that "the Kalra reference has been provided as evidence that is it known in the art to insert/remove a sample carrier during processing without interrupting the processing of other samples." (*Office Action*, p. 8, ll. 18-20). As explained above, such teaching, even if disclosed in *Kalra*, which Applicants do not necessarily concede, however, fail to teach or suggest, "a moveable robotic member for dispensing fluid on the at least one carrier; wherein the at least one carrier is inserted or removed during the processing protocol without interrupting movement of the robotic member," as recited in amended independent claim 102 and similarly amended independent claim 118. Thus, *Ammann* and *Kalra* also fail to overcome the above noted shortcomings of *Custance*.

As explained above, the elements of independent claims 102 and 118 are neither taught nor suggested by the cited references and no reason has been clearly articulated as to why the claims would have been obvious to one of ordinary skill in view of the prior art. Therefore, a *prima facie* case of obviousness has not been established for independent claims 102 and 118, and claims 103-113, 116, 117, 120, and 121, which correspondingly depend from claims 102 and 118. Claims 102-113, 116-118, 120, and 121 are therefore patentable over *Custance*, *Ammann*, and *Kalra*. Applicants respectfully request that this rejection be withdrawn.

II. CONCLUSION

Applicants respectfully submit that claims 75, 90-113, 116-118, 120, and 121 are in condition for allowance.

The Office Action contains characterizations of the claims and the related art with which Applicants do not necessarily agree. Unless expressly noted otherwise, Applicants decline to subscribe to any statement or characterization in the Office Action.

In view of the foregoing amendments and remarks, Applicants respectfully request reconsideration and reexamination of this application and the timely allowance of the pending claims.

Please grant any extensions of time required to enter this response and charge any additional required fees to our Deposit Account No. 06-0916.

Respectfully submitted,

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